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Our File No. ETLIP002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Jaffe

Serial No.: 09/086,138 Examiner: R. Gitomer

Filed: May 28, 1998 Group Art Unit: 1623

For: Determination of Cytotoxic Substances

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8(a)

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October 23, 2000
Date of Signature

Nancy J. Parsons, Reg. No. 40,364

APPEAL BRIEF

The Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

The present appeal brief is respectfully submitted in connection with the appeal filed on August 21, 2000.

Real Party In Interest

The party named in the caption (Jaffe) is the real party in interest.

Related Appeals and Interferences

There are no appeals or interferences known to appellant or to the appellant's legal representative that will directly affect or be directly affected by or having a bearing upon the Board's decision in the pending appeal.

Status of Claims

The application was filed with claims numbered 1-15; the appeal is taken with respect to claims 1-15.

Status of Amendments After Final Rejection

The amendment after final rejection filed April 20, 2000 was not entered.
A second amendment after final is being filed herewith to correct a typographical error in claim 11. The appendix is based on the entry of this second amendment after final.

Summary of Invention

The instant invention is directed to a method for testing whole effluent toxicity, and for the determination of component-toxicity associated with dissolved and particulate materials. A whole effluent sample is one which contains all of the components of an environmental sample in their environmentally occurring ratios. The method involves combining the whole-effluent sample with a growing culture of particle-feeding flagellate protozoans, and monitoring the growth of the flagellate. A decrease in growth of the flagellate is indicative of the presence of cytotoxic agents in the sample.

Issues

A first issue on appeal is whether the "Jaffe" patent (5,387,508) suffices to justify rejection of claims 1, 2, 4, 5 and 15 as obvious under 35 U.S.C. §103(a).

A second issue on appeal is whether the "Jaffe" patent (5,387,508) suffices to justify rejection of claims 3 and 6 as obvious under 35 U.S.C. §103(a).

A third issue on appeal is whether the "Jaffe" patent (5,387,508) suffices to justify rejection of claims 7-14 as obvious under 35 U.S.C. §103(a).

A fourth issue on appeal is whether the "Jaffe" patent (5,387,508) suffices to justify rejection of claims 1-15 as obvious under the judicially created doctrine of obviousness-type double patenting.

Grouping of Claims

The grouping of claims is as follows: for the first issue on appeal, claims 1, 2, 4, 5 and 15; for the second issue on appeal, claims 3 and 6; for the third issue on appeal, claims 7-14; for the fourth issue on appeal, claims 1-15.

Argument

The first issue on appeal. Claims 1, 2, 4, 5 and 15 are rejected under 35 U.S.C. §103(a) as obvious over the Jaffe patent (5,387,508).

The Examiner asserts that Jaffe teaches a liquid, gaseous or solid sample, and teaches various types of whole effluent samples, specifically in Example 5. Appellant respectfully disagrees. Example 5 in Jaffe has two parts, in the first part 2-aminofluorene (2AF) is tested. The *T. rostratus* flagellates are incubated with 10 µg/ml of 2AF. This is clearly not a whole effluent test since the substance to be tested (2AF) is added in a specific concentration. In the second part of Example 5, "fumes" from a rubber stamp manufacturer were tested. Appellant submits that "fumes" do not constitute a whole effluent sample. The attached printout from the US Environmental Protection Agency's Office of Wastewater Management provides information on it's whole effluent toxicity program. Specifically, a definition of WET is provided. "Whole Effluent Toxicity (WET) is a term used to describe the aggregate toxic effect of an aqueous sample (e.g. whole effluent wastewater discharge or ambient receiving water) as measured according to an organism's response upon exposure to the sample (e.g., lethality, impaired growth or reproduction)" (emphasis added). WET tests are described as functioning to "replicate to the greatest extent possible the total effect and actual environmental exposure of aquatic life to effluent toxicants". The organisms used in WET tests are described as "indicators or surrogates for the aquatic community to be protected." WET tests are designed to "predict the impact and toxicity of effluents discharged from point sources into waters of the U.S." The entire focus of WET tests is on water pollution and testing water samples, thus whole effluent is clearly a water-based sample. Additionally, the instant specification teaches whole effluent samples as "liquid effluent samples, including water and sewage samples" (page 3, lines 2-3). All of the examples in the instant specification are performed on liquid samples. The WET

tests are tools used in implementing the water quality controls used for the National Pollutant Discharge Elimination System (NPDES) permitting process of the EPA. All of the information provided by the EPA for WET tests is related to wastewater management. Therefore, it is clear that, in the art of whole effluent toxicity (WET) analysis, the phrase "whole effluent" has an art-recognized meaning which is a water-based sample containing a combination of possible pollutants.

Appellant submits that one of ordinary skill in the art, upon reading the instant specification, would not interpret fumes or other gaseous samples as a whole effluent sample. One of ordinary skill in the art would know that once a gaseous sample is bubbled through a liquid, the composition of the gas could be changed depending on the solubility of the gas components in the liquid. No one of skill in the art would interpret the "fumes" in Example 5 of Jaffe as a whole effluent sample.

Regarding the instant claim limitation that the whole effluent sample is combined directly with the particle-feeding flagellate, the Examiner points to the teaching of Jaffe that samples may be concentrated, or, in the case of solids, suspended in a liquid, prior to testing (column 3). The Examiner then asserts that to dilute or concentrate samples to make them more suitable for a test is well known in the art. This argument is not understood, since the instant claims require direct combination of the sample with the flagellate, and does not involve either dilution or concentration. The Examiner has not provided any reasons why one of ordinary skill in the art, upon reading Jaffe, would be motivated to modify the methods to directly contact the sample with the flagellate.

The Examiner argues that in Example 5 of Jaffe, there is no concentration of the fume sample. However, as discussed above, gases are not within the definition of whole effluent sample as defined by the EPA. Additionally, the process of collecting a gas necessarily results in concentration. When the gas is bubbled through a liquid to capture the gaseous components, some concentration occurs as a result of the differing solubilities of the gaseous components in the liquid. The Examiner asserts that the fume test was contrived to be an effective analysis. However, Jaffe teaches specifically that "another case of growth inhibition and subsequent adaptation was noted" in reference to the fume test (see column 6, lines 24-25). Additionally, the Board's attention is directed to the Rule 132 declaration provided by the inventor of

both the instant invention and the Jaffe patent (filed January 31, 2000). The inventor states that the fume experiment in Example 5 was contrived to evaluate the flagellates' adaptation and immunity abilities. The Examiner is apparently ignoring this declaration and has determined his own reasons why the fume test in Jaffe was carried out, and what the results mean.

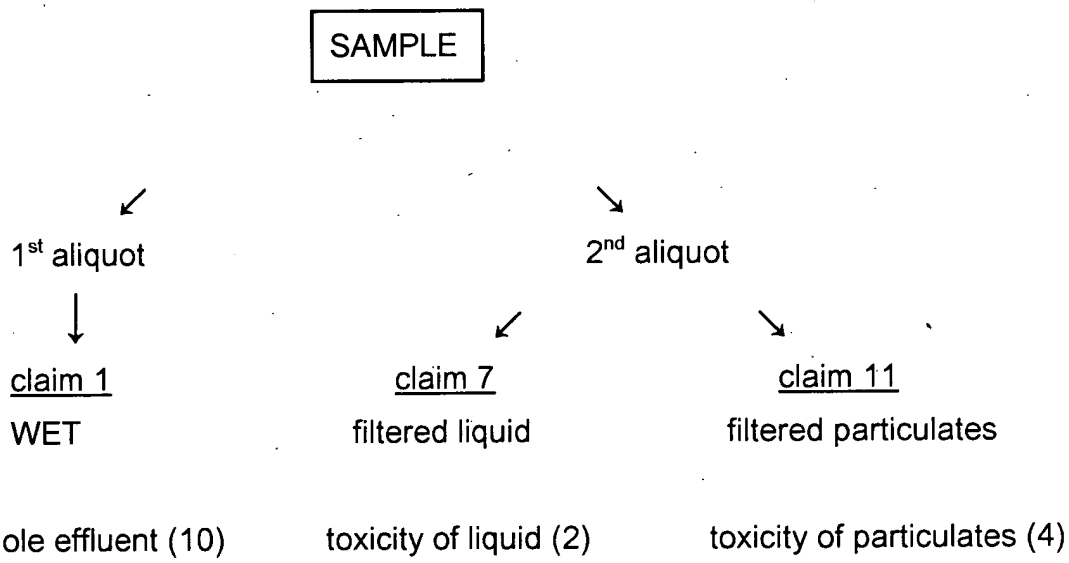
The Examiner argues that step (a) of claim 1 does not limit the type of sample used, and asserts that the "sample" could be a concentrated sample. Appellant submits that the claims require a "whole effluent sample", and that this phrase has an art-recognized definition, as discussed above. The basis for the whole effluent toxicity test is to determine the effect of "whole effluent" as it occurs in nature on aquatic life. Therefore, one of ordinary skill in the art would interpret the claimed "whole effluent sample" as an undiluted, unconcentrated sample. Thus, the Examiner's assertion that there are no limitations on the type of sample are unfounded.

The second issue on appeal. Claims 3 and 6 are rejected under 35 U.S.C. §103(a) as obvious over the Jaffe patent (5,387,508). Regarding the difference in the flagellates recited in claims 3 and 6 and those taught by Jaffe, the Examiner asserts that "in view of the teachings of Jaffe", it would have been obvious to use any known flagellate with the requisite qualities taught in the present specification. However, the Examiner has not indicated which teachings in Jaffe supposedly provide this motivation. Jaffe teaches only *Tetramitus rostratus* as the flagellate for use in the methods. There is absolutely no guidance, suggestion or motivation in Jaffe to use another flagellate for his method. The Examiner appears to be improperly relying on Appellant's disclosure for motivation to modify the Jaffe teachings.

The third issue on appeal. Claims 7-14 are rejected under 35 U.S.C. §103(a) as obvious over the Jaffe patent (5,387,508). Regarding the limitations of claim 7 directed to filtering, and claim 11 directed to particulates, the Examiner asserts that Jaffe teaches concentrating particulates and asserts that filtering is a known method of concentrating particulates. The Examiner then asserts that Appellant is masking the invention at hand by focusing on obvious and irrelevant subject matter. It appears that

the Examiner has not carefully read the claims. Claims 7 and 11 are directed to completely different methods than claim 1. Claim 7 requires the additional steps of 1) filtering a second aliquot of the whole effluent sample, 2) combining the filtered whole effluent sample with a second culture of flagellate, 3) determining the growth of the second flagellate culture, and 4) comparing the growth of the second flagellate culture to the growth of the first culture. The result of claim 7 is the determination of particulate toxic substances in the whole effluent sample. The Examiner's characterization of claim 7 as containing obvious and irrelevant subject matter indicates that he has not recognized these claim limitations, which are not taught or suggested by Jaffe.

In order to clearly point out the differences between claim 1 and claims 7 and 11, Appellant submits the following illustrated example:



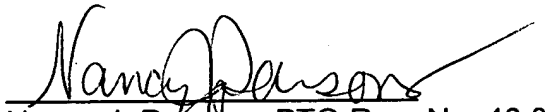
In the above example, in the method of claim 1, a first aliquot it subjected to the whole effluent toxicity (WET) test, and the toxicity level of the whole effluent is 10 (an arbitrary number for this example). In the method of claim 7, a 2nd aliquot of the sample is filtered, and the toxicity of the filtered sample is 2. In the method of claim 11, the particulate fraction of the 2nd aliquot is recovered and its toxicity is 4. The method of the instant invention has the advantage of being able to determine if the toxic substances in the particulates and in the liquid part of a whole effluent sample are merely additive, or,

as illustrated in the example above, if the toxic substances in the liquid and particulate fractions have a combined effect to increase the total toxicity of the whole effluent sample. This method is not taught or suggested by Jaffe. Appellants submit one of ordinary skill in the art would not find any motivation or guidance in Jaffe to modify his invention to achieve the instant invention. Therefore the rejection is in error and should be withdrawn.

The fourth issue on appeal. Claims 1-15 are rejected under the judicially created doctrine of obviousness-type double patenting. The Examiner asserts that the claims of '508 are not patentably distinct from the instant claims because the claims of '508 do not include nor exclude any dilution or concentration of the sample prior to testing. This rejection amounts to an unfair penalty on the Appellant just because he obtained a patent earlier. Were a Terminal Disclaimer to be filed, Appellant's instant claims would have a limited patent term. If the Jaffe patent were to another, an obviousness-type double patenting would not and could not be made. Since Appellant's earlier patent is available as prior art under 35 U.S.C. §103(a), it should be treated as any other prior art document. In addition, the rejection is in error for the same reasons as the 103 rejection, as discussed above. Appellant submits that the obviousness-type double patenting rejection is unfair as well as redundant, and should be withdrawn.

For the foregoing reasons, Appellant submits that all of the claims are in form for allowance. Favorable reconsideration and allowance of the application are respectfully urged.

Respectfully,
Oppedahl & Larson LLP



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Nancy J. Parsons, Reg. No. 40,364

APPENDIX TO APPEAL BRIEF

Claims Involved in the Appeal.

1. A method for evaluating a whole effluent sample for the presence of cytotoxic substances comprising the steps of:

(a) obtaining a sample for testing suspected of containing a plurality of potentially cytotoxic substances;

(b) combining a first aliquot of the whole effluent sample directly with a first culture of a particle-feeding flagellate; and

(c) monitoring the growth of the particle-feeding flagellate culture in the presence of the whole effluent sample, wherein a decrease in growth of the culture in the presence of the whole effluent sample is indicative of the presence of cytotoxic agents in the whole effluent sample.

2. The method according to claim 1, wherein the particle-feeding flagellate is *Tetramitus rostratus* in flagellate form.

3. The method according to claim 1, wherein the particle-feeding flagellate is selected from the group consisting of *Chilodenella uncinata, Bodo caudataus, Cercomonas longicauda, Diplonema ambulator, Scytomonas pusilla* and *Bodo designis*.

4. The method according to claim 1, wherein a series of dilutions of the whole effluent sample is prepared and each dilution is individually combined with a culture of particle-feeding flagellate to determine a dose response curve.

5. The method according to claim 4, wherein the particle-feeding flagellate is *Tetramitus rostratus* in flagellate form.

6. The method according to claim 4, wherein the particle-feeding flagellate is selected from the group consisting of *Chilodenella uncinata, Bodo caudataus, Cercomonas longicauda, Diplonema ambulator, Scytomonas pusilla* and *Bodo designis*.

7. The method of claim 1, further comprising the steps of

filtering a second aliquot of the whole effluent sample through a filter having a defined pore size to produce a filtered whole effluent sample from which particulate materials greater in size than the defined pore size have been removed;

combining the filtered whole effluent sample with a second culture of particle-feeding flagellate;

determining the growth of the second particle-feeding flagellate culture in the presence of the filter whole effluent sample; and

comparing the growth of the second particle-feeding flagellate culture in the presence of the filtered whole effluent sample to the growth in the presence of the unfiltered whole effluent sample, wherein as difference in the growth is indicative of the presence of particulate toxic substances in the whole effluent sample.

8. The method of claim 7, wherein a series of dilutions of the filtered whole effluent sample is prepared and each dilution is individually combined with a culture of particle-feeding flagellate to determine a dose response curve.

9. The method according to claim 8, wherein the particle-feeding flagellate is *Tetramitus rostratus* in flagellate form.

10. The method according to claim 7, wherein the particle-feeding flagellate is *Tetramitus rostratus* in flagellate form.

11. The method according to claim 7, further comprising the steps of

recovering a particulate fraction from an aliquot of the whole effluent sample;

combining the particulate fraction with a third culture of particle-feeding flagellate;

determining the growth of the particle-feeding flagellate culture in the presence of the particulate fraction; and

comparing the growth of the particle-feeding flagellate culture in the presence of the particulate fraction to the growth in the presence of the unfiltered whole effluent sample.

12. The method of claim 11, wherein a series of dilutions of the particulate fraction is prepared and each dilution is individually combined with a culture of particle-feeding flagellate to determine a dose response curve.

13. The method according to claim 12, wherein the particle-feeding flagellate is *Tetramitus rostratus* in flagellate form.

14. The method according to claim 11, wherein the particle-feeding flagellate is *Tetramitus rostratus* in flagellate form.

15. The method of claim 1, further comprising the step of monitoring the growth of a second culture of particle-feeding flagellate in the presence of the whole effluent and comparing the growth of the first and second cultures, wherein the mean size of the flagellates in the first and second cultures is different.